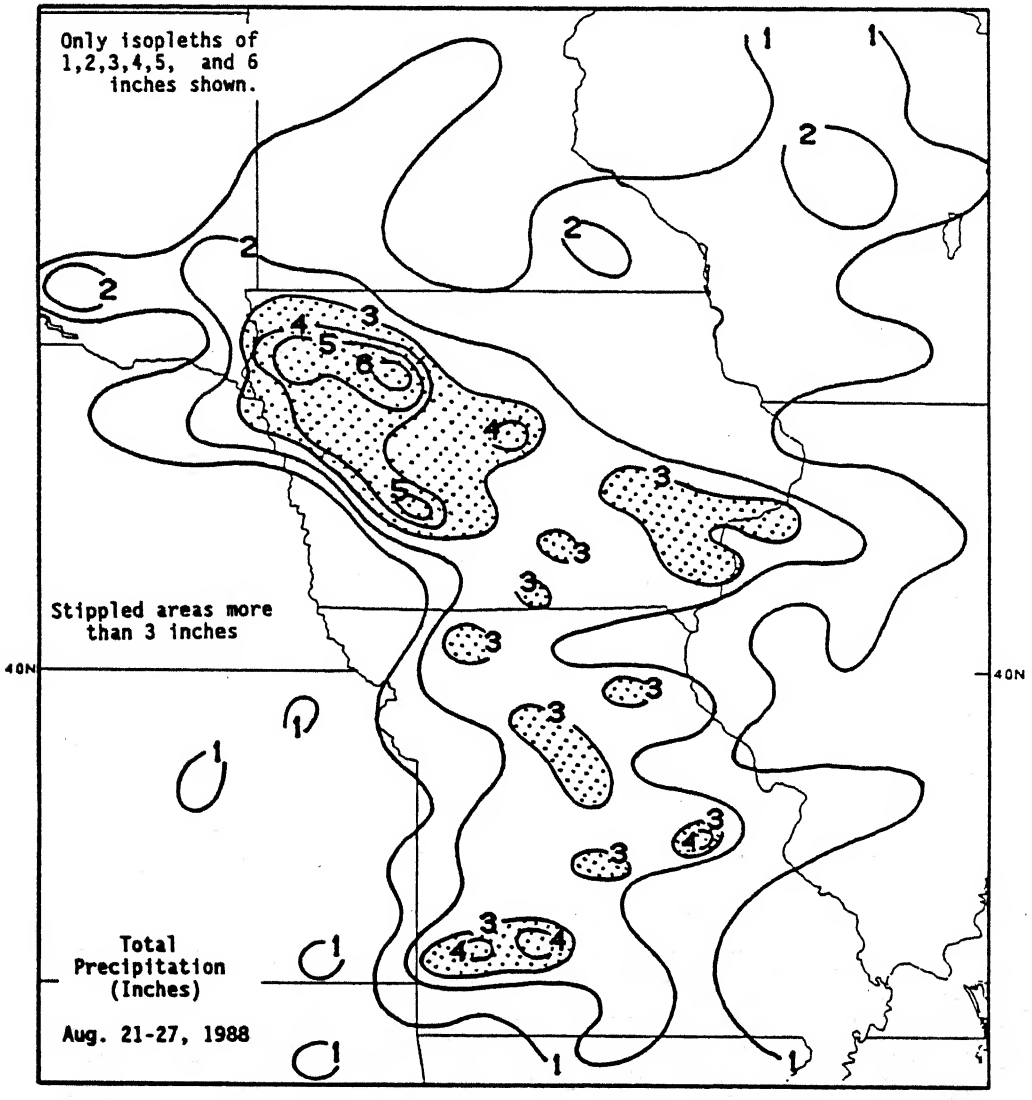
CLIMATE ANALYSIS CENTER

WEEKLY CLIMATE BULLETIN

No. 88/35 Washington, DC August 27, 1988



PORTIONS OF THE CENTRAL UNITED STATES, ESPECIALLY IOWA AND MISSOURI, RECEIVED SIGNIFICANT RAINFALL LAST WEEK AS NEAR TO ABOVE NORMAL PRECIPITATION OVER THE PAST FEW WEEKS HAS GREATLY REDUCED SHORT-TERM DRYNESS

WEEKLY CLIMATE BULLETIN

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This Bulletin is issued weekly by the Climate Analysis Center and is designed to indicate, in a brief, concise format, current surface climatic conditions in the United States and around the world. The Bulletin contains:

Highlights of major global climatic events and anomalies.
U.S. climatic conditions for the previous week.
U.S. apparent temperatures (summer) or wind chill (winter).
Global two-week temperature anomalies.
Global four-week precipitation anomalies.
Global monthly temperature and precipitation anomalies.
Global three-month precipitation anomalies (once a month).
Global twelve-month precipitation anomalies (every 3 months).
Global temperature anomalies for winter and summer seasons.
Special climate summaries, explanations, etc. (as appropriate).

Most analyses contained in this Bulletin are based on preliminary, unchecked data received at the Center via the Global Telecommunication System. Similar analyses based on final, checked data are likely to differ to some extent from those presented here.

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GLOBAL HIGHLIGHTS

MAJOR CLIMATIC EVENTS AND ANOMALIES AS OF AUGUST 27, 1988
(Approximate duration of anomalies is in brackets.)

1. United States:
MORE RELIEF FROM HOT, DRY CONDITIONS.
A steady progression of cool air masses entering the United States resulted in temperatures returning to near normal across most of the country. Short term precipitation amounts (last four weeks) were near normal; however, significant long term precipitation deficits remain. See U.S. Weekly Weather Highlights for more details [24 weeks dry].

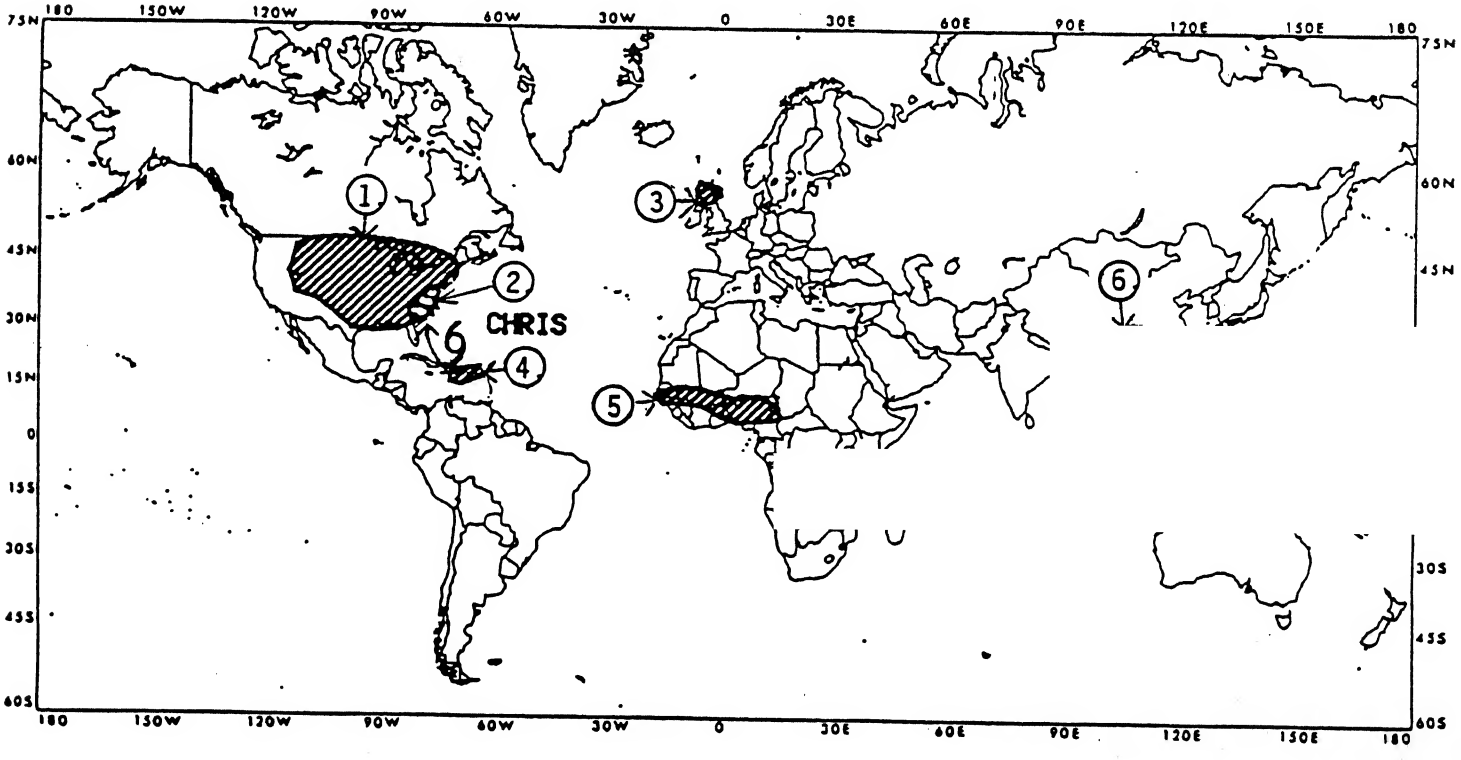
2. Eastern United States:
TROPICAL STORM CHRIS HITS EAST COAST.
Late in the week Tropical Storm Chris threatened the Florida Coast before reaching landfall in South Carolina and causing heavy rain, high winds, and tornadoes [Episodal Event].

3. Scotland:
UNUSUALLY WET CONDITIONS END.
Little or no precipitation, generally less than 6.8 mm (0.27 inch), fell in Scotland. The dry weather brought relief from the unusual wetness there [Ended at 7 weeks].

4. Puerto Rico and Dominican Republic:
HEAVY RAINS DURING PASSAGE OF TROPICAL DEPRESSION.
Heavy rains, up to 164.5 mm (6.48 inches), were reported as a tropical depression crossed Puerto Rico and the Dominican Republic [Episodal Event].

5. Sahel Region:
ABOVE NORMAL RAINFALL REPORTED.
Many areas of the Sahel Region have reported heavy rains, as much as 208.0 mm (8.19 inches), particularly in Senegal and Benin. Farther east, Meteosat images and incomplete meteorological data have collaborated press reports of flooding in parts of Nigeria and Cameroon [Episodal Event].

6. Southern China:
WETNESS DEVELOPS.
Heavy rains, up to 232.2 mm (9.14 inches), were reported at stations in the interior of southern China [4 weeks].



Approximate locations of the major anomalies and events described above are shown on this map. See the other world maps in this Bulletin for current two-week temperature anomalies, four-week precipitation anomalies, and (occasionally) longer-term anomalies.

U.S. WEEKLY WEATHER HIGHLIGHTS

FOR THE WEEK OF AUGUST 21 THROUGH AUGUST 27, 1988

Strong thunderstorms associated with a slow moving cold front produced heavy rainfall (up to 6.5 inches) in portions of the Midwest, most notably in Iowa and Missouri (see front cover), and moderate to heavy amounts (1-3 inches) throughout much of New England, while a strengthening tropical depression off the eastern coast of Florida (which later became Tropical Storm Chris on Sunday, August 28) dropped between 2 and 5 inches of rain along the Atlantic Coast from Florida northward to North Carolina (see Table 1). In central Arizona, isolated thundershowers left behind 2 to 3 inches of precipitation for the second consecutive week. Elsewhere, inundating rains soaked south-central Alaska, and widely-scattered thunderstorms hit portions of southern and northeastern Louisiana, central Mississippi and Alabama, western Arkansas, and south-central Tennessee according to the River Forecast Centers. Light to moderate precipitation fell in the southern thirds of the Intermountain Region and Rockies, and in most of the contiguous U.S. east of the 100°W longitude, which further helped to alleviate the long-term dryness in the latter region. Little or no rain was observed in the normally dry Far West, and across the northern halves of the Rockies and Great Plains, in western and southern Texas, and the western sections of the Carolinas.

Unseasonably hot weather dominated the western and southern third of the nation as departures of +6 to +12°F were located in the interior portions of the Pacific Northwest and California, the Great Basin, and the southern Great Plains (see Table 2). In addition, weekly temperatures averaged near to slightly above normal in the central and southern Rockies, the Middle and Lower Mississippi Valleys, and the southern half of the Atlantic Coast states. Triple digit readings occurred throughout the central California and Oregon interiors, southeastern Washington, western Idaho, and from extreme southern Texas northward to Nebraska (see Figure 1). The heat and lack of precipitation only worsened both existing and potential forest fire conditions in the West. In contrast, last week's cooler weather was welcomed in the northern and eastern U.S. after the area had endured several weeks of abnormal warmth. Regions with the greatest temperature departures below normal (-5 to -8°F) included the eastern Great Lakes, northern New England, and northern Alaska (see Table 3), while the northern Great Plains, Upper Mississippi and Ohio Valleys, and most of Alaska and Hawaii experienced slightly below normal weekly temperatures. Lows dipped into the thirties in parts of the northern and central Rockies, central Oregon, northern Pennsylvania, western New York, and extreme northern New England, and bottomed out with 29°F at Big Piney, WY on 8/22.

TABLE 1. Selected stations with more than two inches of precipitation for the week.

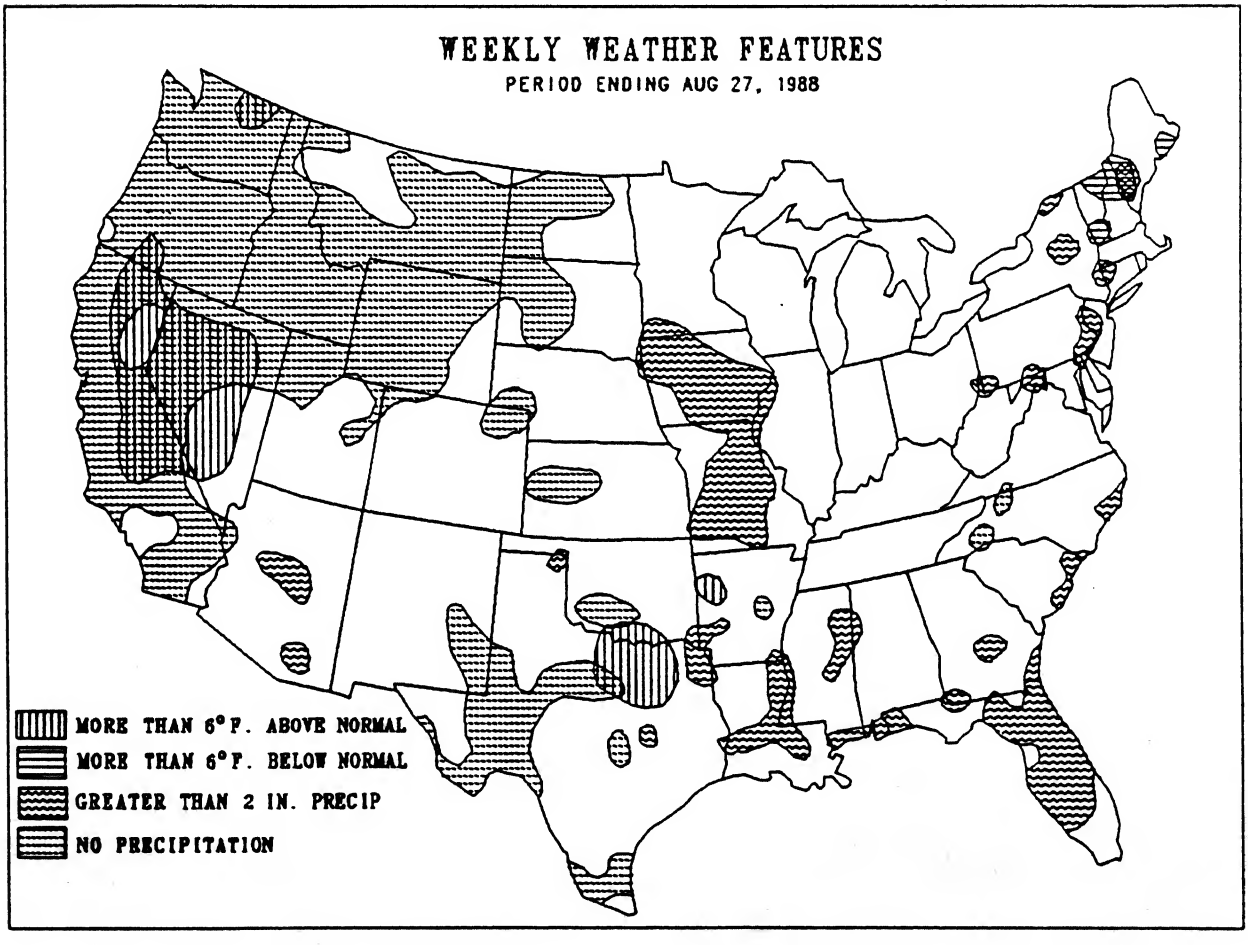
Valdez, AK	7.48	Des Moines, IA	2.61
Yakutat, AK	6.44	Cape Hatteras, NC	2.60
Pensacola, FL	5.12	Daytona Beach, FL	2.60
Cordova, AK	4.76	Prescott, AZ	2.54
Jacksonville, FL (JAX)	4.61	West Plains, MO	2.54
Cape Canaveral, FL	4.42	Baton Rouge, LA	2.42
Kodiak, AK	4.28	Pellston, MI	2.40
Tampa/Mac Dill AFB, FL (MCF)	4.01	Charleston, SC	2.39
Orlando, FL	3.82	Columbia, MO	2.37
Gainesville, FL	3.78	Tampa, FL (TPA)	2.33
Brunswick, GA	3.62	Fort Myers, FL	2.28
Myrtle Beach AFB, SC	3.45	Joplin, MO	2.26
Moline, IL	3.44	Biloxi/Keesler AFB, MS	2.26
Columbus AFB, MS	3.43	Tucson/Davis-Monthan AFB, AZ	2.16
Springfield, MO	3.37	Mobile, AL	2.16
Cherry Point, NC	3.32	Rome/Griffiss AFB, NY	2.15
Sioux City, IA	3.29	Willow Grove NAS, PA	2.15
Mt. Washington, NH	2.92	Tucson, AZ	2.14
Massena, NY	2.74	Talkeetna, AK	2.07
Cedar Rapids, IA	2.73	Jacksonville NAS, FL (NIP)	2.02
Knob Noster/Whiteman AFB, MO	2.68		

TABLE 2. Selected stations with temperatures averaging greater than 4°F ABOVE normal for the week.

Station	TDepNml	AvgT(°F)	Station	TDepNml	AvgT(°F)
Reno, NV	+12	77	College Station, TX	+5	88
Winnemucca, NV	+ 8	75	Tulsa, OK	+5	85
Omak, WA	+ 8	75	Redding, CA	+5	85
Sexton Summit, OR	+ 8	70	McAlester, OK	+5	85
Dallas/Love Field, TX	+ 7	91	Wichita, KS	+5	83
Mt. Shasta, CA	+ 7	72	Roswell, NM	+5	82
Dallas/Ft. Worth, TX	+ 6	90	Fayetteville, AR	+5	80
Beeville NAS, TX	+ 6	90	La Junta, CO	+5	79
Wichita Falls, TX	+ 6	89	Pueblo, CO	+5	77
Fort Smith, AR	+ 6	86	Caliente, NV	+5	77
Ponca City, OK	+ 6	85	Lewiston, ID	+5	76
Fresno, CA	+ 6	84	San Jose, CA	+5	74
Victorville/George AFB,CA	+ 6	82	Colorado Springs, CO	+5	72
Marysville, CA	+ 6	82	Portland, OR	+5	72
San Bernardino, CA	+ 6	82	Spokane, WA	+5	71
Sacramento, CA	+ 6	80	Elko, NV	+5	70
Medford, OR	+ 6	76	Ely, NV	+5	68
Waco, TX	+ 5	90	Seattle/Tacoma, WA	+5	68

TABLE 3. Selected stations with temperatures averaging greater than 4°F BELOW normal for the week.

Station	TDepNml	AvgT(°F)	Station	TDepNml	AvgT(°F)
Mt. Washington, NH	-8	38	Caribou, ME	-5	56
Bangor, ME	-7	58	Massena, NY	-5	60
Concord, NH	-7	59	Augusta, ME	-5	61
Barrow, AK	-6	31	Utica, NY	-5	62
Wainwright, AK	-6	34	Saginaw, MI	-5	63
Montpelier, VT	-6	57	Poughkeepsie, NY	-5	64
Lebanon, NH	-6	59	Jackson, MI	-5	64
Glens Falls, NY	-6	60	Block Island, RI	-5	64
Albany, NY	-6	62	Hartford, CT	-5	65
Houlton, ME	-5	56			



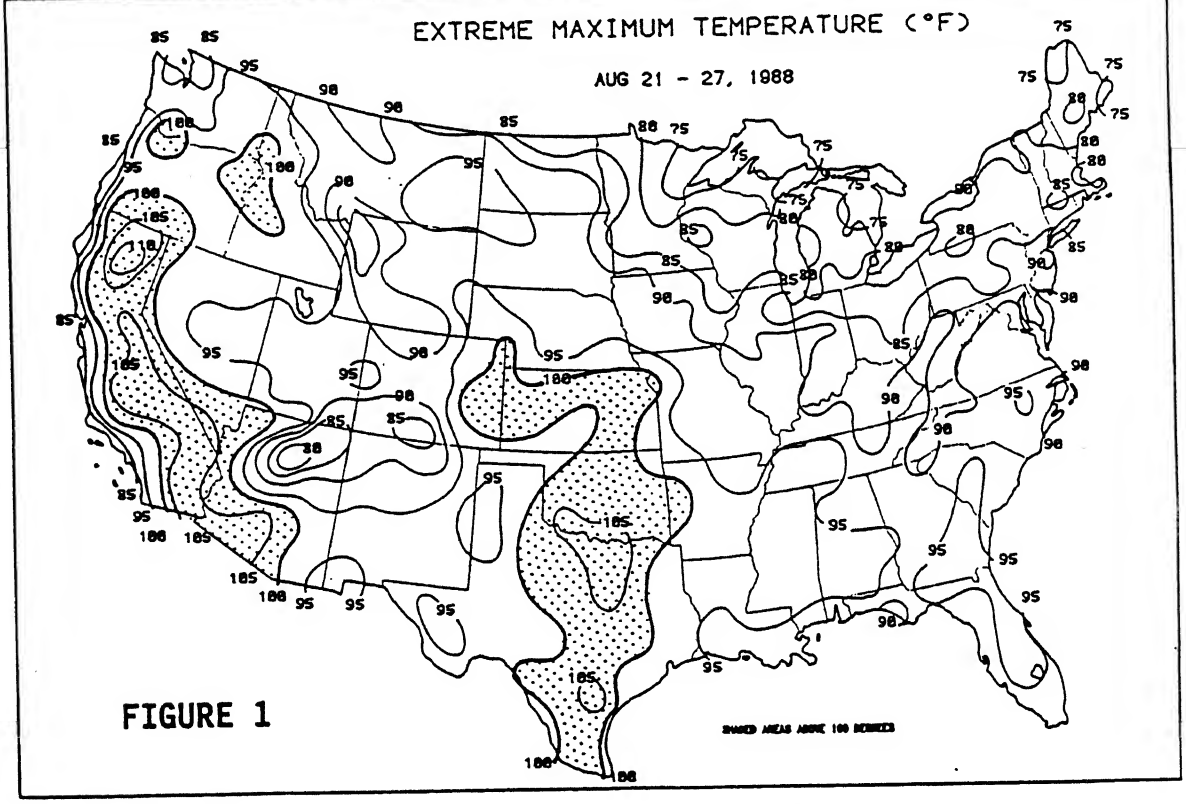
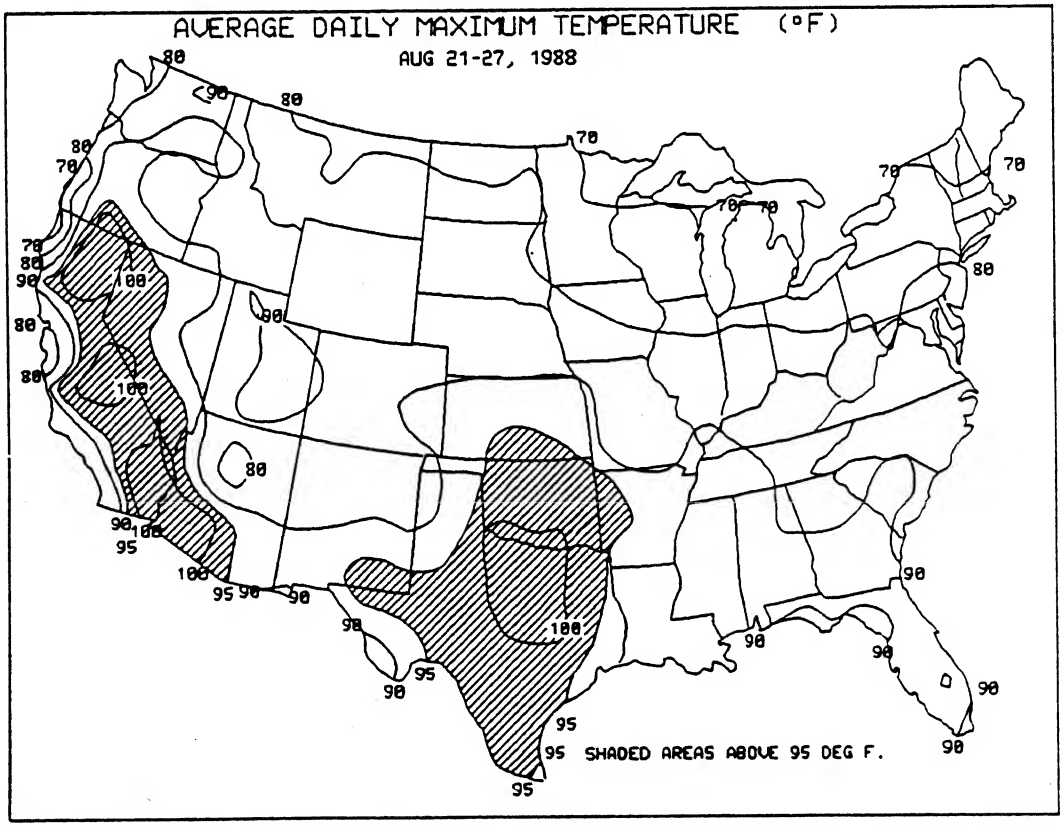
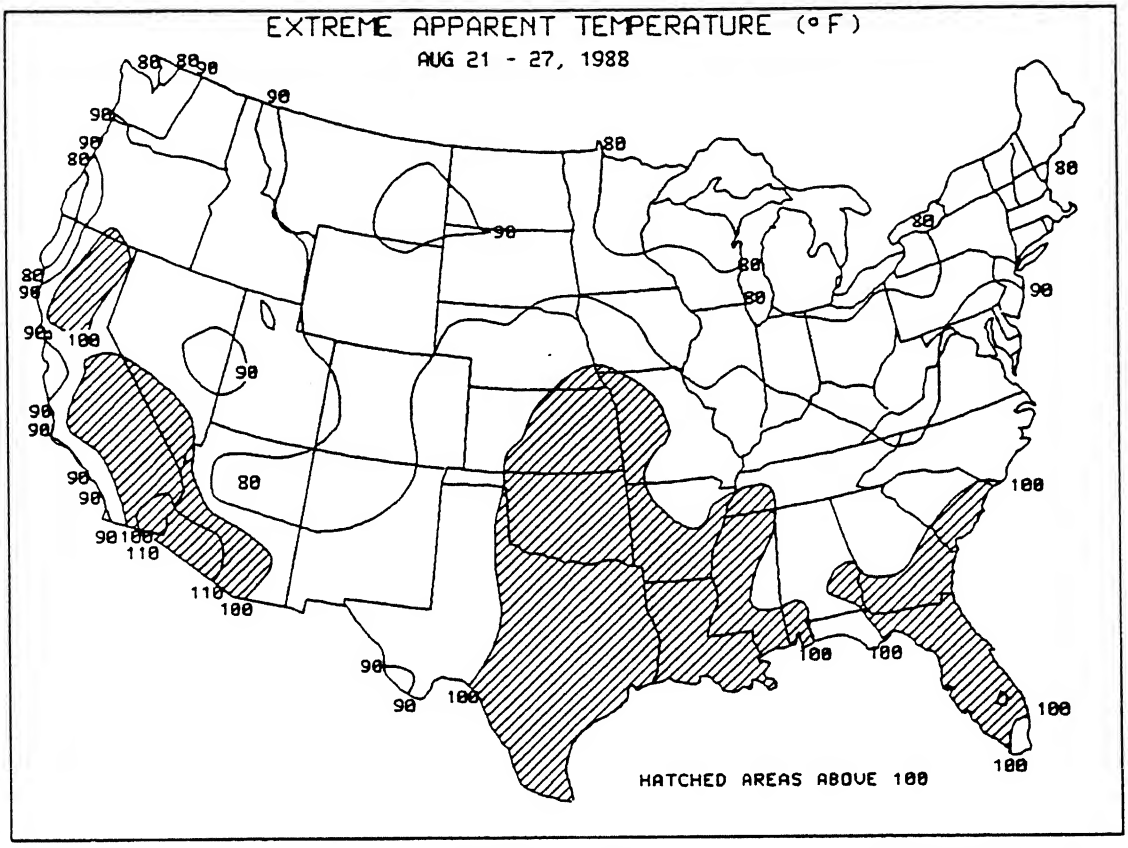


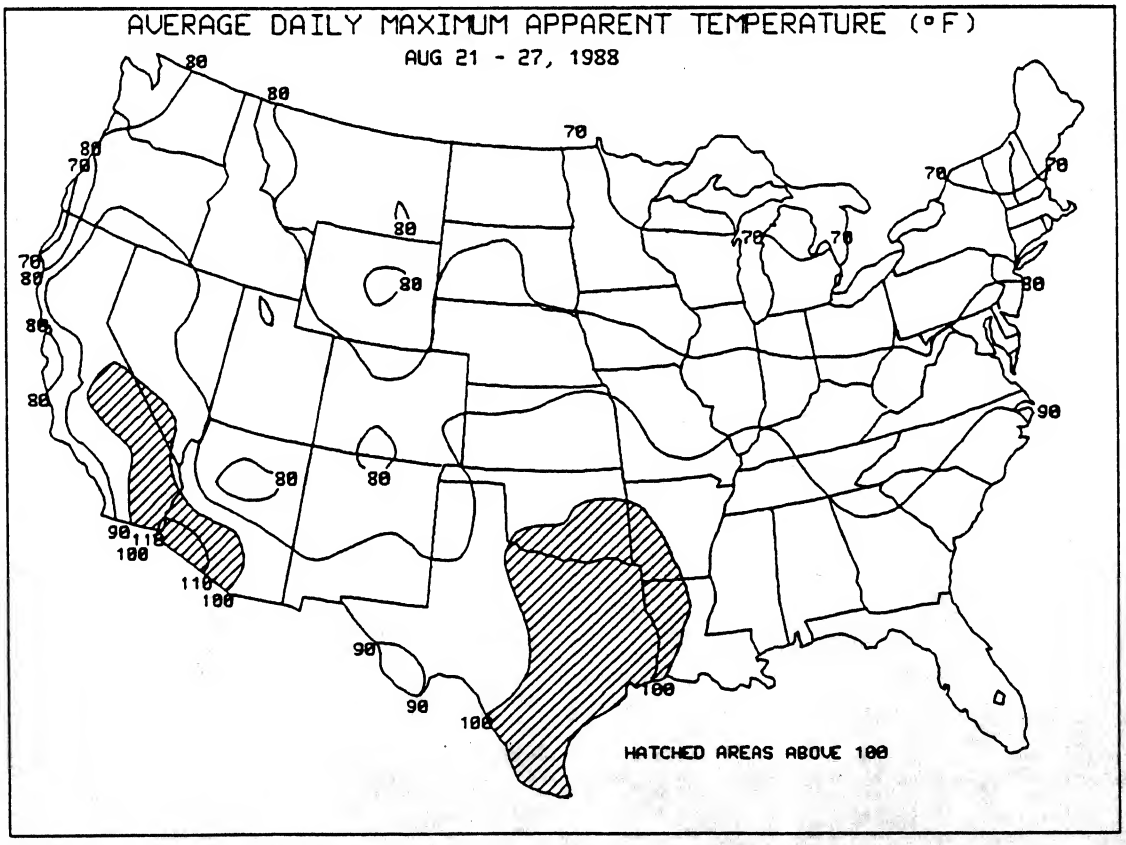
FIGURE 1

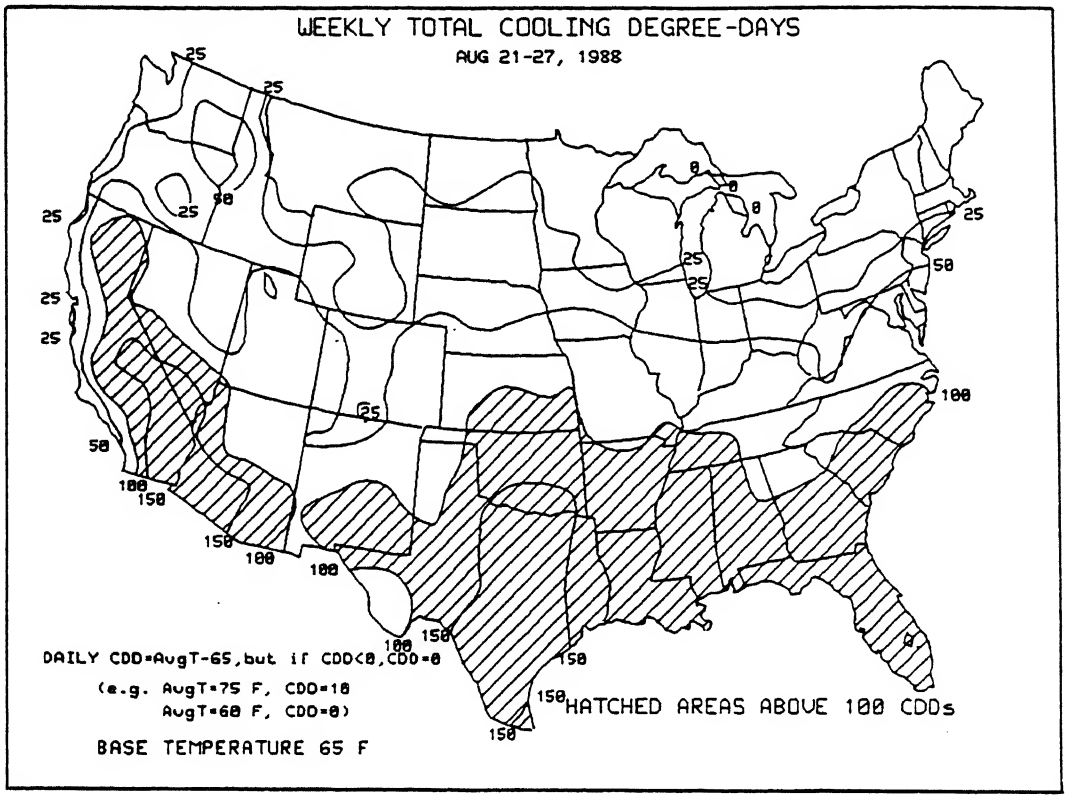
For a welcome change of pace, highs remained under 100°F for the first time in several weeks in the East, Midwest, and northern Great Plains, but did surpass the century mark in the central and southern Great Plains and the interiors of California and Oregon (top); maximum temperatures AVERAGED over 100°F for the week in Texas, interior California, and the desert Southwest as unseasonably hot weather afflicted the regions (bottom).



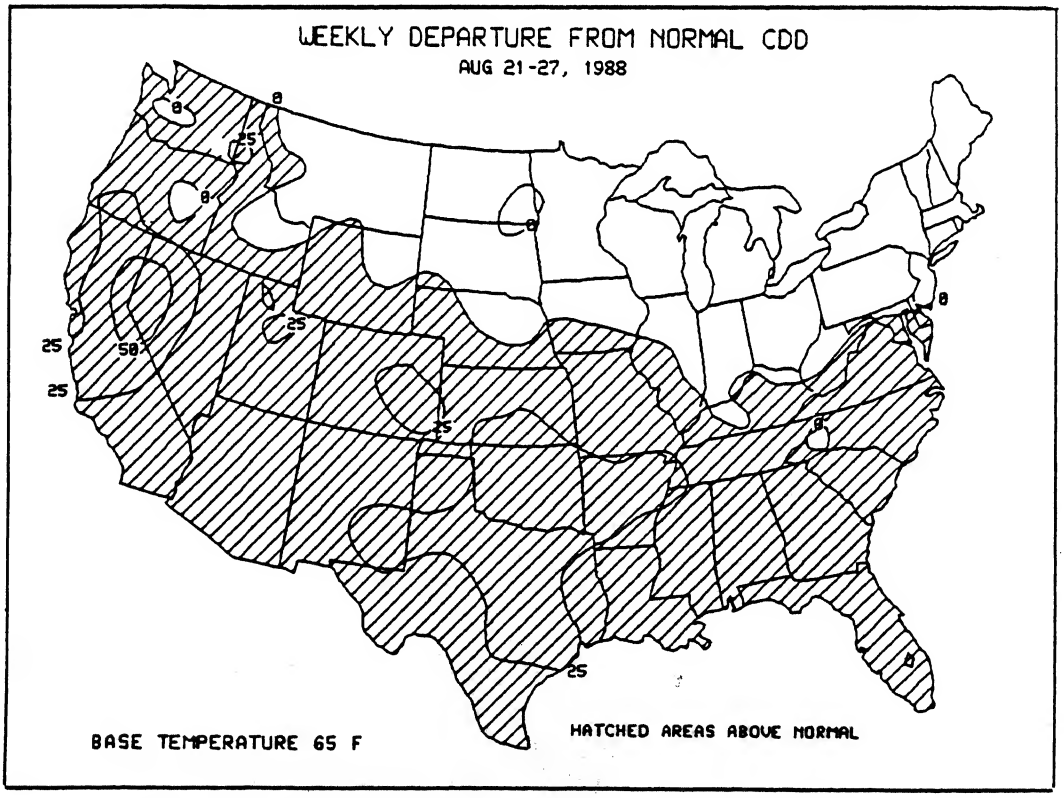


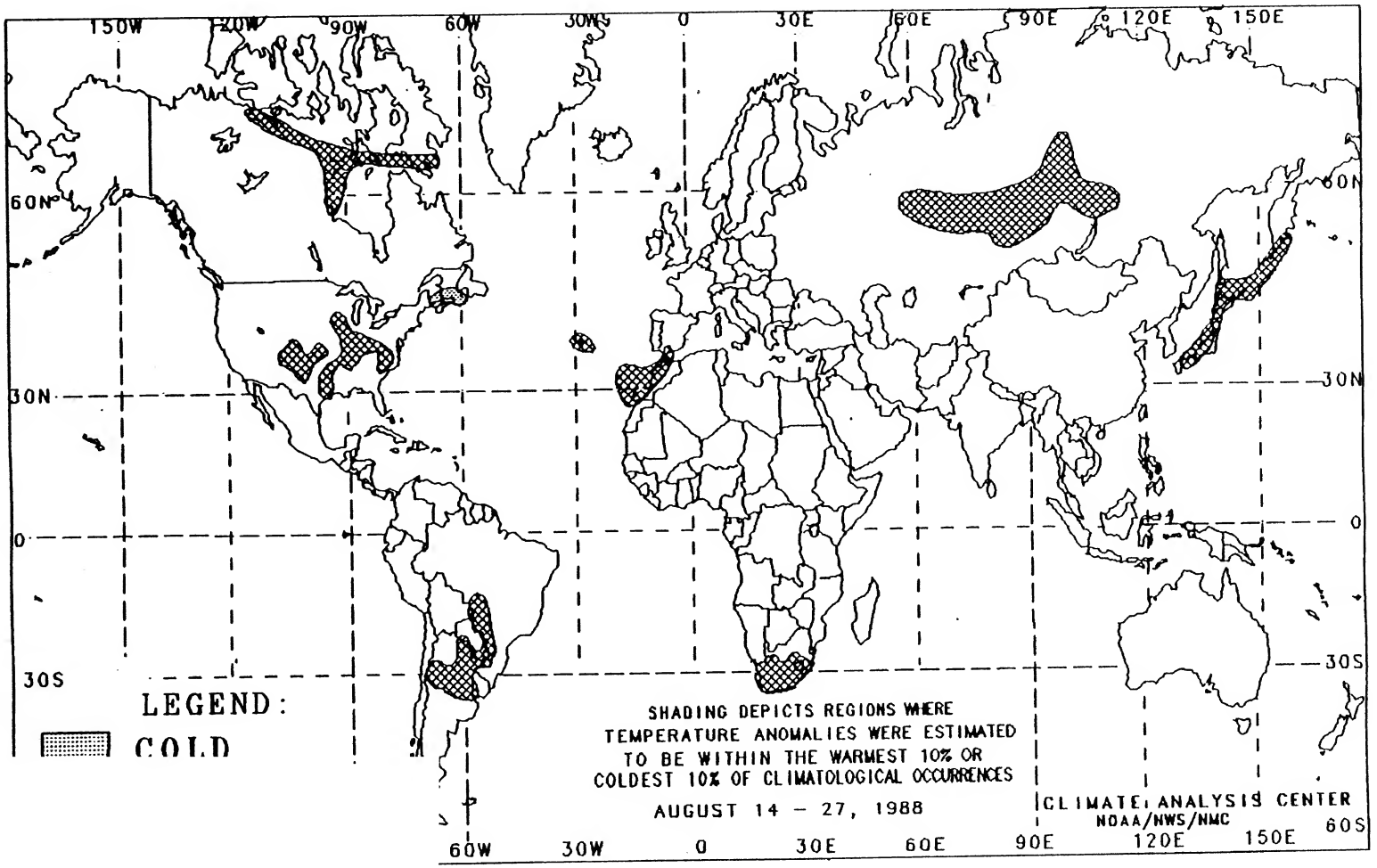
After last week's dangerous (>105°F) extreme apparent temperatures in the Midwest, generally comfortable maximum apparent temperatures (less than 90°F) covered the area in response to a cool, dry air mass from Canada while the southern Great Plains, South Atlantic, and desert Southwest endured uncomfortable conditions at least once (top); persistent heat and/or humidity was limited to the Lower Mississippi Valley and the desert Southwest (bottom).





As cooler Canadian air covered the northern third of the U.S., total and departure above normal cooling degree days dramatically dropped in comparison to previous weeks. Areas surpassing 100 CDD's were limited to the southern and southwestern U.S. (top), while the greatest above normal air-conditioning demands occurred in the western Great Basin and southern Great Plains (bottom).





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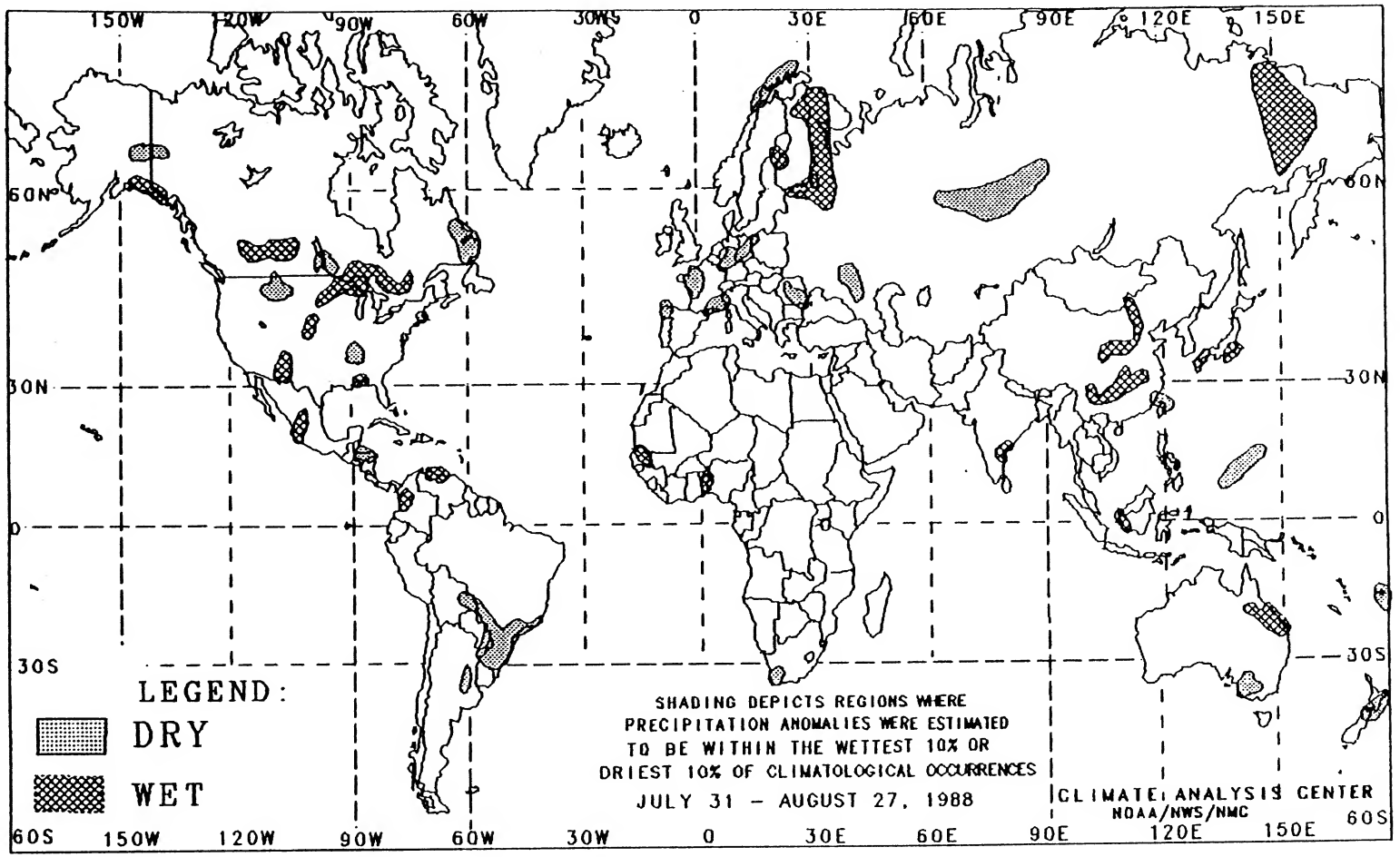
The chart shows general areas of two week temperature anomalies. Caution must be used in relating it to local conditions, especially in mountainous regions.



The anomalies on this chart are based on approximately 2500 observing stations for which at least 27 days of precipitation observations (including zero amounts) were received or estimated from synoptic reports. As a result of both missing observations and the use of estimates from synoptic reports (which are conservative), a dry bias in the total precipitation amount may exist for some stations used in this analysis. This in turn may have resulted in an overestimation of the extent of some dry anomalies.

In climatologically arid regions where normal precipitation for the four week period is less than 20 mm, dry anomalies are not depicted. Additionally, wet anomalies for such arid regions are not depicted unless the total four week precipitation exceeds 50 mm.

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HOTTEST AND DRIEST YEARS FOR THE U.S. CLIMATE DIVISIONS DURING MAY-JULY SINCE 1931 (58 YEARS)

(Condensed from the Weekly Weather and Crop Bulletin Vol. 75, No. 34 dated Aug. 23, 1988)

Based upon preliminary 1988 monthly precipitation and temperature data for the 344 climate divisions across the contiguous United States, the historical data for the 3-month period of May-July for every year since 1931 (58 years) were totaled for precipitation and averaged for temperatures. Each year's values were then ranked to find the year with the maximum (hottest) average temperature and minimum (driest) total precipitation. In Figure 1, the three years of 1934, 1936, and 1988 are distinguished for their extreme dryness throughout the Great Plains, Midwest, and Southeast. Preliminary 1988 precipitation data had 65 climate divisions as its driest year during the May-July period versus 49 and 17 for 1936 and 1934, respectively.

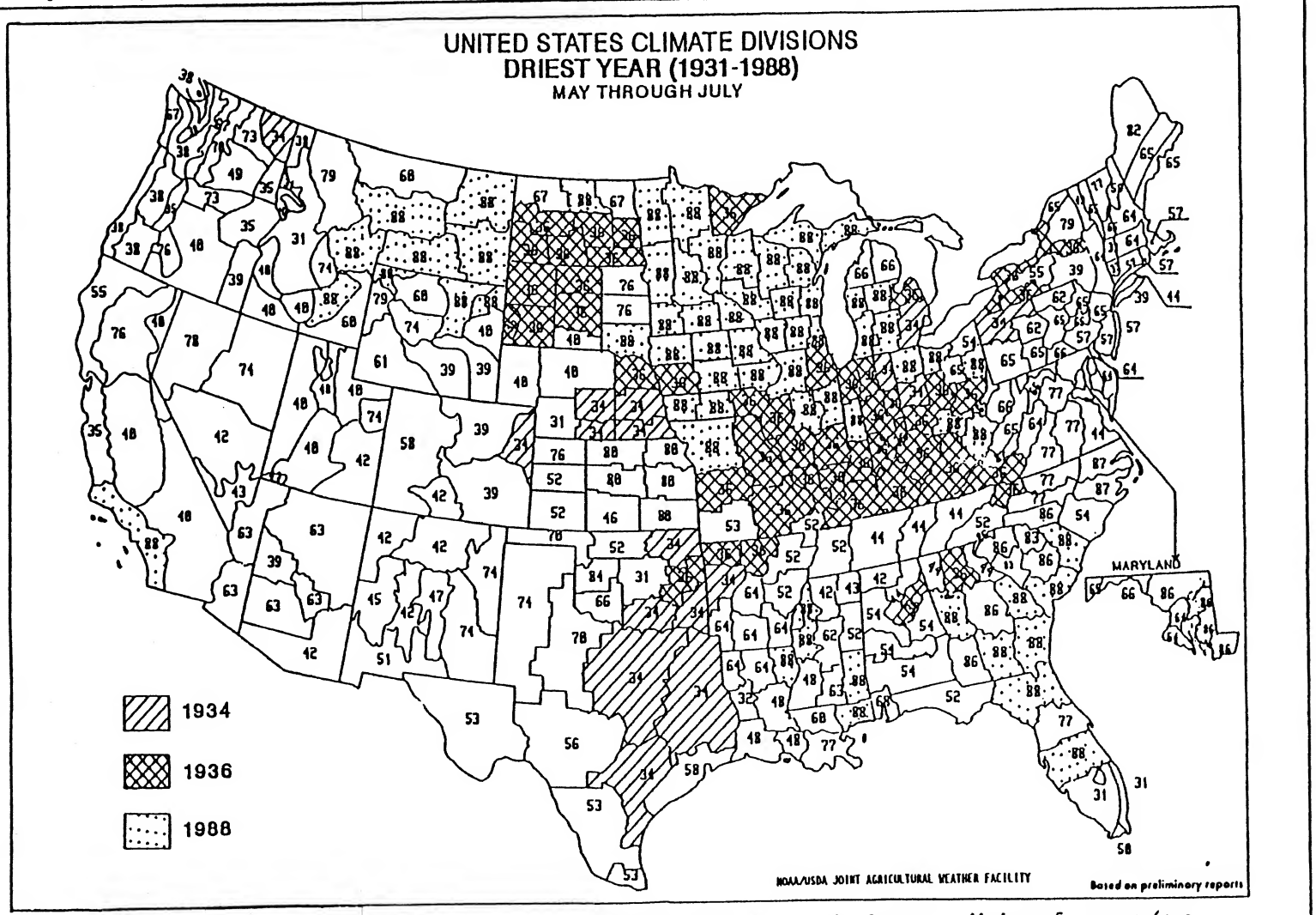

Figure 1. Driest year for the May-July period since 1931 (58 years). The last two digits of a year (e.g. 88 = 1988) are plotted. The abnormally dry years of 1934, 1936, and 1988 are shaded for comparison. Based upon preliminary results, 1988 had more climate divisions (65) than 1936 (49) or 1934 (17) that fell into the driest year category.

The abnormal warmth of May-July during 1988 is diminished somewhat as compared to 1934 (see Figure 2). There were 118 climate divisions during 1934 that recorded their hottest May-July, while 1988 "only" totaled 64. The next warmest years were 1952 and 1943 as both had 28 climate divisions. The second driest year (1936) was the fifth warmest during the past 58 years with a total of 18 climate divisions. Please note that this year's data are subject to revision following the National Climatic Data Center's more complete compilation since the 1988 preliminary monthly climate division data are obtained from preliminary weekly climate division data. The preliminary rankings for August will become available early in September, as will the "finalized" data for May, 1988 (average lag time of 3-4 months to finalize monthly climate division data).

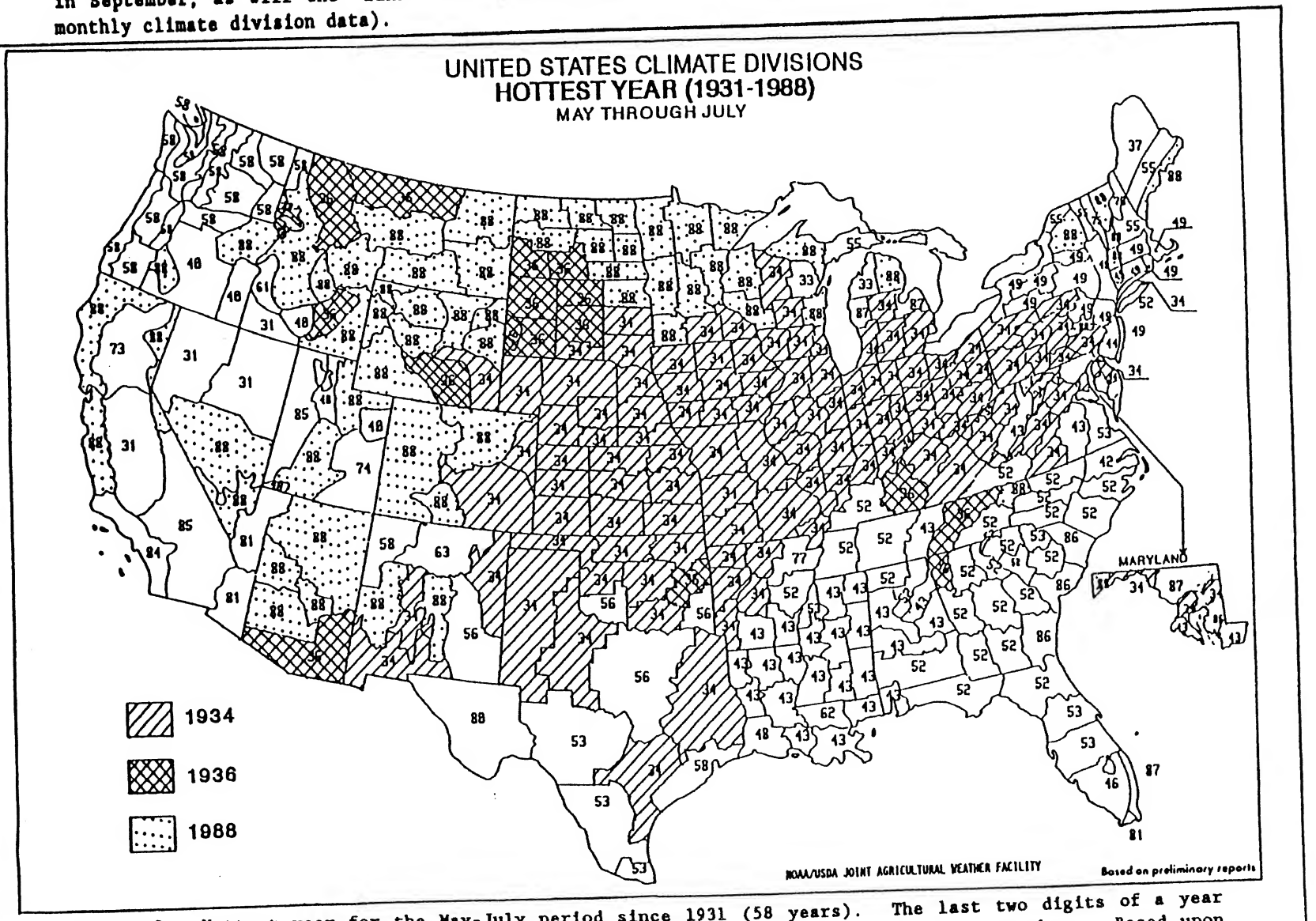

Figure 2. Hottest year for the May-July period since 1931 (58 years). The last two digits of a year (e.g. 88 = 1988) are plotted. The years of 1934, 1936, and 1988 are shaded for comparison. Based upon preliminary results, only 1934 was warmer (118) than 1988 (64) as compared to the number of climate divisions that were categorized as the hottest year.